SIEMENS

MAMMOMAT 300/3000

SP

Printer-connection kit

Installation and Setting Instructions

RX B7-120.033.03.04.02
Replaces: RX B7-120.033.03.03.02

English
06.96

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Scope of delivery

Printer-connection kit 63 82 852 X041E, comprising Connection cable, Floppy disk, Cable protection, Installation and Setting instructions.

Documents required

M300: Service Instructions RX B7-120.061.01...

M3000: Service Instructions RX B7-230.061.01...

Measuring instruments required

Service PC e.g. Siemens-Nixdorf PCD 3NSX/20 or similar.

Connection cable between PC and generator, part No.96 00 440.

Tools required

Standard installation tools.

Generator software required

M300: version 2.4 or later.

M3000: version 1.6 or later.

Note: If version 1.4, only default set-up label can be used.

Printer requirements

To be provided by the customer:

M300:

Epson LQ570+ printer with serial interface board C82305/6. Other compatible printers may also be used if they fulfil national standards regarding safety and are responsive to EPSON printer commands according to the ESC/P2 protocol. The Mammomat communicates with printers using asynchronous serial communication, RS 232. The communication parameters are as follows:

Baudrate:	9600
Data bits:	8
Stop bit:	1
Parity:	None
Handshake:	DTR

If the LQ570+ printer is used the setting of the printer switches will be:

Switch 1:

1	2	3	4	5	6	7	8
Optional				Off	Off	Off	Off

Switch 2:

1	2	3	4
Off	Off	Off	Off

Settings of serial interface board switches in the printer:

Switch 1:

1	2	3	4	5	6
On	On	Off	Off	On	Off

Switch 2:

1	2	3	4
On	On	On	On

M3000:

Any printer with serial interface for RS232, fulfilling national standards regarding safety, and being responsive to EPSON printer or compatible commands. The Star printer DP834OS from Star Micronics Co may also be used.

The EPSON codes used are:

ASCII	Hex	Meaning
CAN	18	Clear printer buffer
ESC @	1B, 40	Reset printer
ESC C 6	1B, 43, 36	Define page length to six lines
ESC O	1B, 4F	Cancel bottom margin
ESC 2	1B, 32	Set line spacing to 1/6 inch
ESC M	1B, 4D	Set pitch to 12 cpi
ESC E	1B, 45	Bold print ON
ESC F	1B, 46	Bold print OFF
CR	0D	Carriage return
LF	0A	Line feed

The communication parameters are as follows:

Baudrate:	9600
Data bits:	8
Stop bit:	1
Parity:	None
Handshake:	X-on/X-off

Installing the connection cable

Note!

All power should be off before removal of covers.

1 Remove the front cover (1/Fig. 1) from the generator.

2 Remove the cable-outlet cover (2/Fig. 1) at the back of the stand.

3 Remove the cable-duct covers.

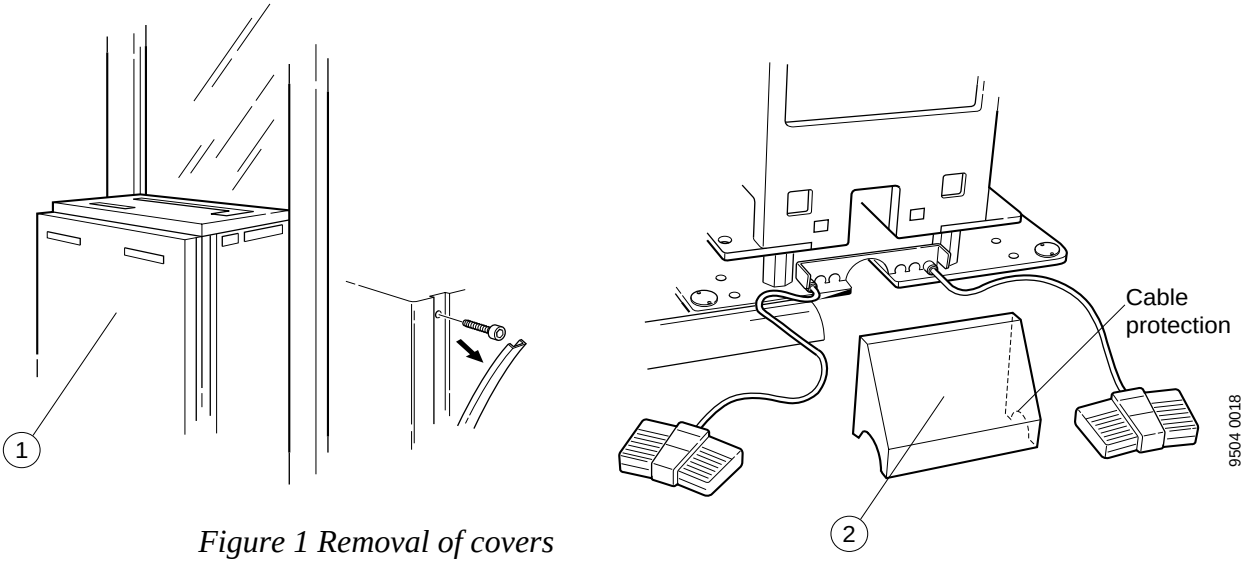


Figure 1 Removal of covers

4 Lay the printer cable between generator and stand, in the same cable-duct compartment as for the IONTOMAT signal cables, unit-control cable and power-supply cable, see Fig. 2. Ensure sufficient cable length between cable entry and connector X2 on p.c. board D707 in the generator, see Fig.3. If MAMMOMAT 300/ 3000 not is equipped with isolation board D707 the printer cable shall be connected to X990 on the D702 board.

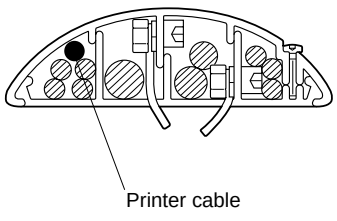


Figure 2. Cable laying

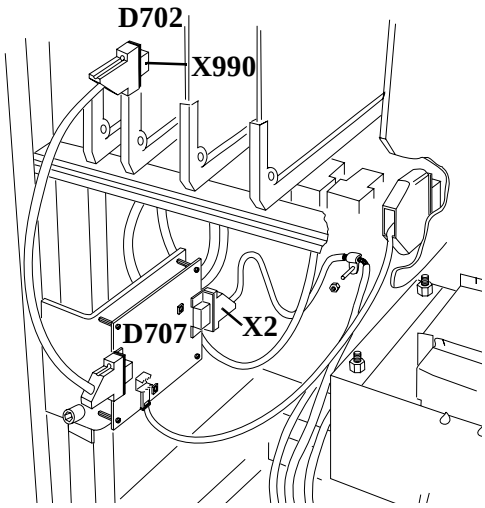


Figure 3

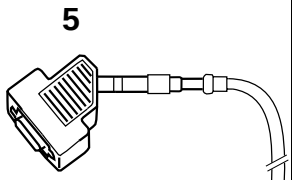
Connection cable for printer

MAMMOMAT 300/3000

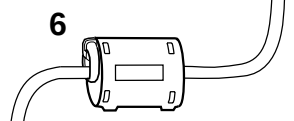
5 If the MAMMOMAT has a free clamp on generator rear wall, below the D700 board, acc. to Fig.4, the cable shall here be shielded as shown in Fig. 5;

- Remove existing clamp (1).
- Cut and remove cable tie (2).
- Cut and remove isolation (3).
- Fasten the shield to the wall by supplied clamp F (4).

If this clamp is occupied or does not exist, see step 8.



6 Printer cable shall be equipped with ferrite core marked D, see Fig. 4.

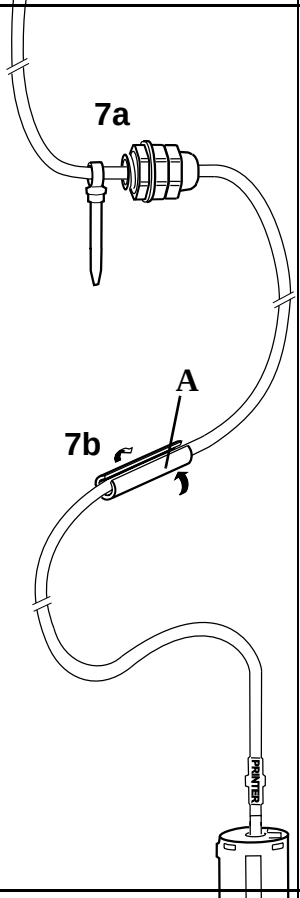


7a; Printer cable shall be strain-relieved at the stand. Strain releaving requires dismounting of plate, see Fig. 6;

- Place the strain-relieve bushing and cable tie in position.
- Tighten the cable tie, cut of the remains and push the bushing over the cable tie to achieve proper relieving.
- Place the bushing in the notch and tighten the bushing, Fig. 6.

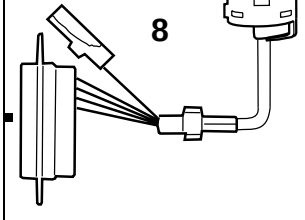
Tubing A, shall not be used for ***this*** MAMMOMAT 300/3000.

7b; Not applicable to this MAMMOMAT



8 If the MAMMOMAT 300/3000 is not equipped with clamp as step 5, the shield conductor shall be connected to pin 1 in the 25-pin D-sub connector marked C.

9 Assemble the 25-pin D-sub.



MAMMOMAT 300/3000-CE

5 The CE version of MAMMOMAT has a free clamp on generator rear wall, below the D700 board, acc. to Fig.4, the cable shall here be shielded as shown in Fig. 5;

- Remove existing clamp (1).
- Cut and remove cable tie (2).
- Cut and remove isolation (3).
- Fasten the shield to the wall by supplied clamp F (4).

6 Printer cable shall be equipped with ferrite core marked D, see Fig. 4.

7a; **CE version according to Fig. 7**

Printer cable shall be strain-relieved at the stand;

- Cut the cable tie and let the bushing hang free under the cable outlet cover.
- Dismount the existing screws holding the clamp for printer connection.
- Put the open cut tubing, marked A, on the cable at the point of strain relieve and fasten the clamp with the new 12 mm long screws marked E.

7b; CE version according to Fig 8

Printer cable shall be strain-relieved at the stand;

- Place the strain-relieve bushing and cable tie in position.
- Tighten the cable tie, cut of the remains and push the bushing over the cable tie to achieve proper relieving.
- Place the bushing in the notch and tighten the bushing.

Tubing A shall not be used for ***this (7b)*** MAMMOMAT 300/3000.

8 The shield conductor pin shall **not** be connected in the CE-version of MAMMOMAT 300/3000.

9 Assemble the 25-pin D-sub.

10 Attach additional self-adhesive cable protection to the cable-outlet cover, see Fig. 1.

11 Lay the printer cable along the nearest wall, and up to the printer.

Note!

The printer shall be placed at least 1.5 m from the patient. The total length of the printer-connection cable is 8,4 m.

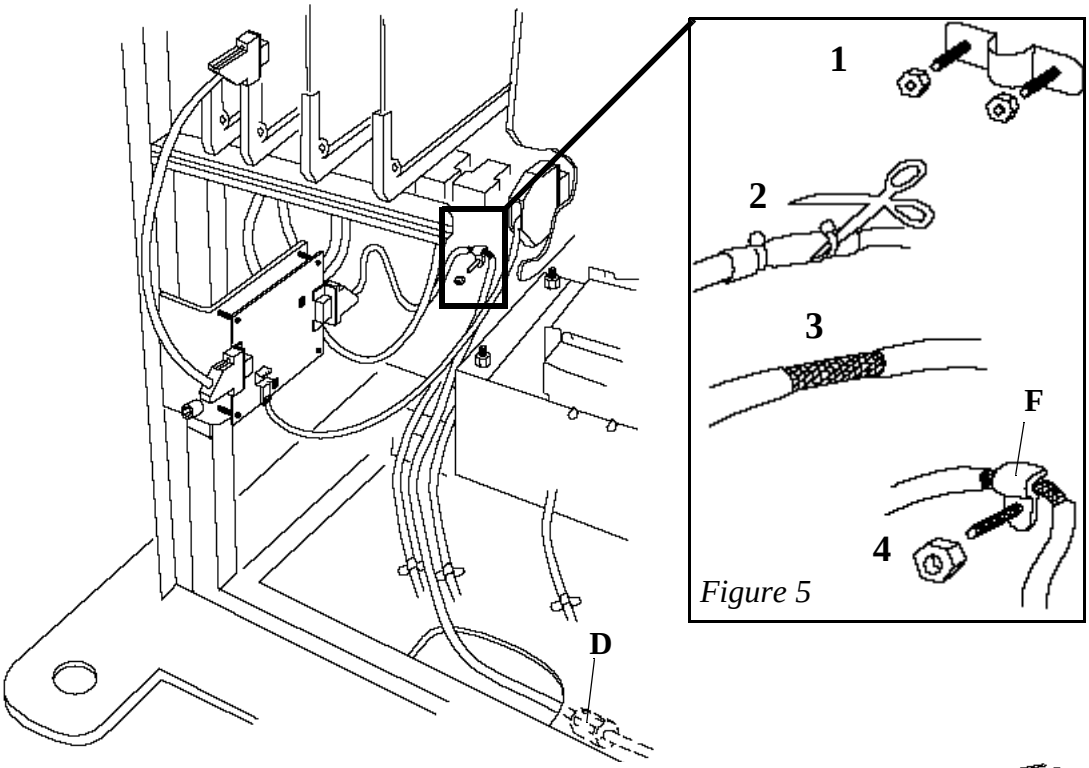


Figure 5

Figure 4

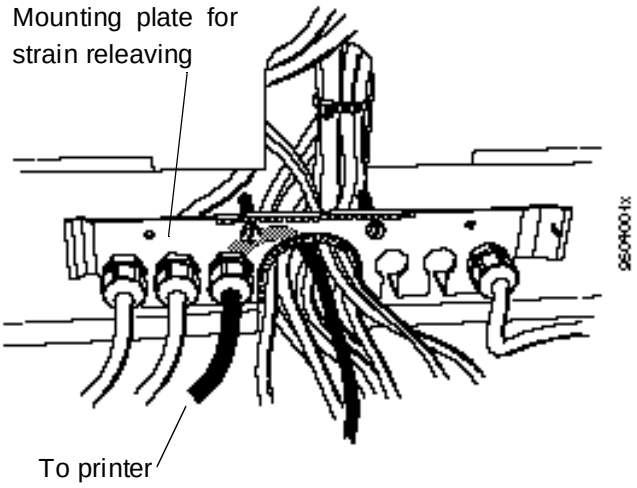


Figure 6. MAMMOMAT 300/3000

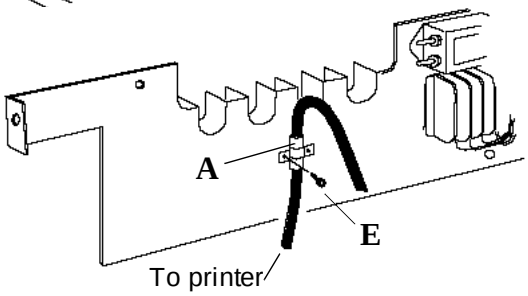


Figure 7. MAMMOMAT 300/3000-CE/1

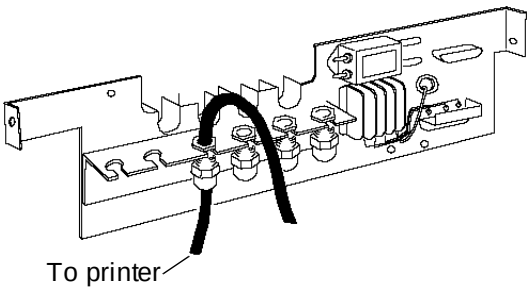


Figure 8. MAMMOMAT 300/3000-CE/2

Settings for printer connection

1 On the D702 board, set the switch S3 to pos. "1".

Note!

Working with the service PC is described in the Service Instructions for M300 and M3000.

2 Connect the service PC to D702.X990.

3 Insert the service floppy disk and start the *Service* program.

4 At the main menu, select *Configuration* and press <Enter>.

5 Select *Miscellaneous* and press <Enter>.

6 Select *Printer* and press <Enter>.

7 Select *RS232C* using the UP and DOWN cursor keys.

8 Store the programmed values by pressing the <F2> function key.

9 Quit the program by pressing the <F10> function key.

10 Remove the service floppy disk.

Configurating the M300

1 Insert the M300 label configuration floppy disk.

2 Type *lab300* and press <Enter>.

3 Type name of institution (tax. 27 characters) and press <Enter>.

4 If default label setup is desired, steps 5 - 7 shall be disregarded. select *Save Default* to load the default label setup.

5 Select *Place Item*, press <Enter>.

Institution Date kV mAs Focus Sense Exp. time Comp. dist. Comp. force	Use the UP and DOWN keys to select the desired item and press <Enter>. Use the cursor keys in the Label Location field to move to the position where the appropriate indication is to be printed. Acknowledge the position with <Enter>, and select *Place Item* again. The Lowest window on the screen shows which items are left to be placed.
Exit	Exit this window

6 *Delete Item*. Deletes the item you select from the label.

7 *Save Label*. Use save label to store the programmed data.

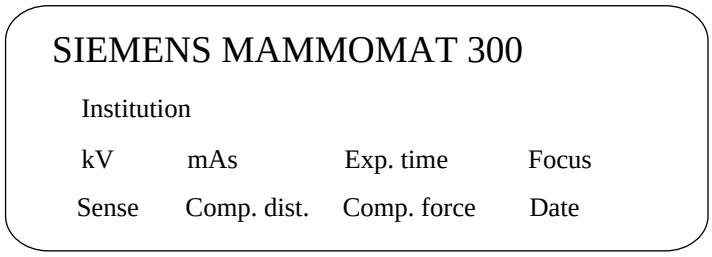


Figure 4 Default label.

Field	Input value
kV	kV-value for the exposure.
mAs	mAs-value for the exposure.
Exp. time	Exposure time in seconds.
Focus	▣ Large focus. ▣ Small focus.
Sense	Density correction for the exposure.
Comp. dist.	Compressed thickness.
Comp. force	Compression force.
Date	Month, day, year.

8 *Quit.* Use quit to exit this program.

Configurating the M3000

1 Insert the M3000 label configuration floppy disk.

2 Type *lab3000* and press <Enter>.

3 Type name of institution (max. 27 characters) and press <Enter>.

4 Type number of labels to be fed by the printer when pushing the limit button on the control panel and press <Enter>. This number is dependent on the printer model. Enter a value from 1 to 9 to make it easy to tear off the written label.

Note!

In order to make the form feed operate, the printer must be turned on after the MAMMOMAT, or an exposure must be performed.

5 If default label setup is desired, steps 6 - 8 shall be disregarded.Select *Save Default* to load the default label setup

6 Select *Place Item*, and press <Enter>.

Institution Date kV mAs Focus Sense Exp. time Comp. dist. Comp. force	Use the UP and DOWN keys to select the desired item and press <Enter>. Use the cursor keys in the Label Location field to move to the position where the appropriate indication is to be printed. Acknowledge the position with <Enter>, and select *Place Item* again. The Lowest window on the screen shows which items are left to be placed.
Exit	Exit this window

7 *Delete Item*. Deletes the item you select from the label.

8 *Save Label*. Use save label to store the programmed data.

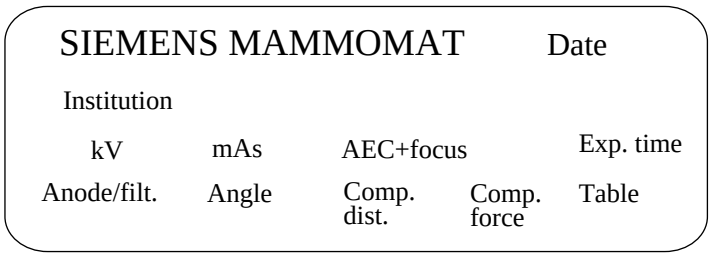


Figure 5 Default label.

Field	Input value
Date	Month, day, year.
kV	kV-value for the exposure.
mAs	mAs-value for the exposure.
AEC+focus	Density correction for the exposure. LF for large focus. SF for small focus.
Exp. time	Exposure time in seconds.
Anode/filt.	Mo/Mo Molybdenum anode/Molybdenum filter. Mo/Rh Molybdenum anode/Rhodium filter. W/Rh Tungsten anode/Rhodium filter.
Angle	The projection angle during exposure.

Field	Input value
Comp. dist.	Compressed thickness.
Comp. force	Compression force.
Table	18x24 table without grid. 18x24 G table with grid. 24x30 table without grid. 24x30 G table with grid. MAG 1.5 magnifying table (magnification factor 1.5). MAG 1.8 magnifying table (magnification factor 1.8). Stereo biopsy unit.

9 *Quit.* Use quit to exit this program.

Common procedure for both M300 and M3000

1 Shut down the system.

2 On the D702 board, set the switch S 3 to pos. "2".

3 Disconnect the service PC and connect the printer cable.

4 Reinstall all covers.

After each exposure, the label is printed out automatically.

Label layout

The labels shall have at least 40 printable columns and 4 printer lines. The label must be at least 90 mm wide and have a height of approximately 20 mm. There shall be 6 lines 1" (25.4 mm) with a line spacing of 1/6" (4.2 mm) between the start of one label to the start of the next.

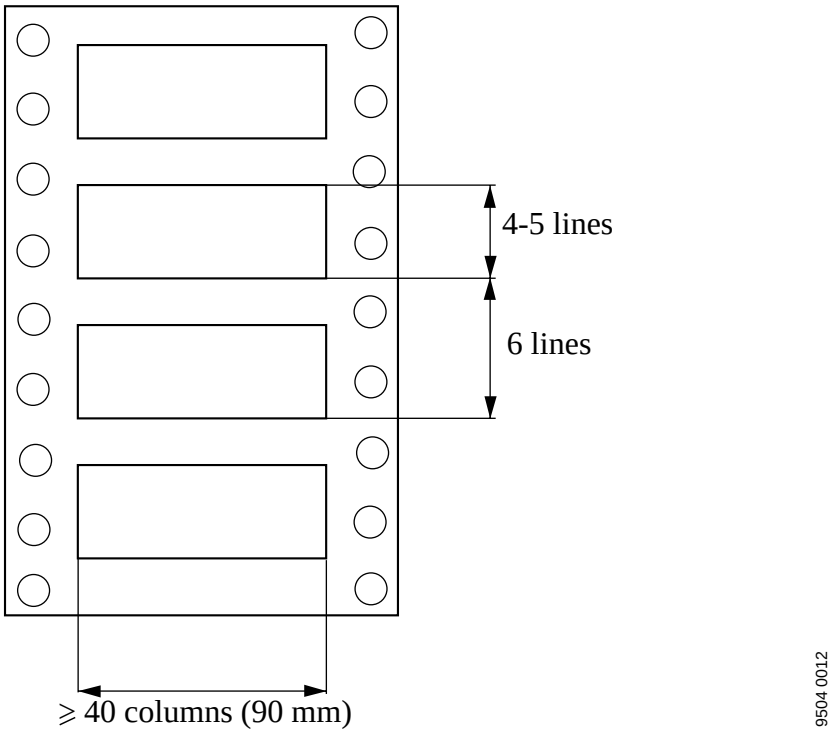


Figure 6 Label layout.

Important differences between M300 and M3000

M300

The printer must be switched on before the Mammomat to be initialized correctly. The form feed of labels must be done on the printer.

M3000

The printer and the Mammomat can be switched on in any order. The form feed of labels can be done either directly on the printer, or by pressing the limit button on the control panel. If the limit button is used, the number of labels specified in the label configuration program (in the form feed field) will be fed. While the limit button is also used for error resetting, the form feed will work only if there are no errors presented in the mAs window.

Note!

Form feed by pressing the limit button will only work if the printer is switched on after the Mammomat, or after an exposure has been performed.

4-2 Important differences between M300 and M3000